

***NATIONAL WEATHER SERVICE WESTERN REGION SUPPLEMENT 17-2003
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***Operations and Services
Tsunami Warning Services, NWSPD 10-7
Tsunami Warning Center Operations, NWSI 10-701***

WESTERN REGION TSUNAMI WARNING OPERATIONS

OPR: W/WR1x4 (J. Lorens)

Certified by: W/WR1 (R. Douglas)

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Signed

10/23/03

Vickie Nadolski

Date

Director, Western Region

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A. Example

1. West Coast/Alaska Tsunami Watch/Warning/Advisory Product A-1
2. West Coast/Alaska Tsunami Watch/Warning Cancellation B-1

1. General: This Regional Supplement describes responsibilities and provides guidance to National Weather Service (NWS) Western Region (WR) Weather Forecast Offices (WFO) with coastal areas of responsibility (in California, Oregon, and Washington). WR WFOs with coastal areas of responsibility are responsible for planning for and taking appropriate action when there is a threat of a tsunami, including dissemination of tsunami watches and warnings. Coastal WFOs in WR are also responsible for ensuring the readiness of office staff and systems through routine operational drills and for coordinating community outreach activities to increase tsunami hazard awareness and to assist in emergency preparedness for tsunami events (e.g. promotion of the TsunamiReady program). State emergency offices (California, Oregon, and Washington) have the responsibility to develop warning procedures, plans and evacuations for local communities. WFOs should cooperate with these agencies and, where possible, aid in warning dissemination. Specific (localized) procedures will be included in WFO Station Duty Manuals.

2. Tsunami Watch/Warning Products and Dissemination: Tsunami watch/warning/advisory and earthquake information bulletin headers (AWIPS headers: **TSUWCA, TIBWCA, EQIAKX, and EQIWOC**) and dissemination paths are described at:

<http://wcatwc.arh.noaa.gov/comms/comms.htm>

Specific message definitions for these products are provided at:

<http://wcatwc.arh.noaa.gov/definition.htm>

The West Coast/Alaska Tsunami Warning Center (WC/ATWC), located at Palmer, Alaska, is the official source of all tsunami watches, warnings, and supplemental information bulletins for WR WFOs. See Appendix A for an example Tsunami Watch/Warning/Advisory product (issued by WC/ATWC).

The initial notification of the tsunami watch/warning will be transmitted by WC/ATWC to WFOs in California, Oregon, and Washington via AWIPS and also by voice announcement on the National Warning System (NAWAS). If NAWAS is inoperative, commercial telephone should be used as a back-up. Tsunami Watches/Warnings will be handled and disseminated by WFOs with the highest possible priority. Concerning dissemination of tsunami watches/warnings on NOAA Weather Radio (NWR), the following procedures apply.

2.1 Product Types and appropriate lead times. Edit the TSUWCA product for information specific to tsunami watches and/or warnings effective in WFO areas of responsibility, taking into account NWR broadcast areas which extend into adjacent WFO County Warning Areas. Tsunami watches and warnings may be manually recorded, but should be broadcast without delay, using appropriate SAME codes on NWR transmitters with coastal public and marine zone coverage (this will activate EAS as defined by the governing EAS plan). Tsunami watches and warnings may also be broadcast on transmitters covering (solely) inland areas, depending on local customer requirements. Minimum information in broadcast tsunami watches/warnings (as taken from the TSUWCA) will include:

- a. Effective area(s) for watches/warnings.
- b. Time, location, and magnitude of tsunami-generating earthquake.
- c. Estimated times of arrival of tsunami at designated geographical points (from TSUWCA).

2.2 Updates to Tsunami Watches/Warnings. Updated Tsunami Watches/Warnings (also using the product header **TSUWCA**) may be issued by the WC/ATWC to further refine watch/warning areas and forecast times of arrival. Follow similar procedures as outlined in paragraph 2.1 (above).

2.3 Advisories. When the Pacific Tsunami Warning Center (PTWC) in Hawaii issues a tsunami watch and/or warning within its Area of Responsibility (AOR), but the west coast (California, Oregon, and Washington) *remains outside the warning threshold area*, the WC/ATWC follows up by issuing a “Tsunami Advisory” for the west coast (also using the AWIPS header: **TSUWCA**). For earthquakes of magnitude 6.5 or greater, but remaining below warning threshold, a “Tsunami Information Bulletin” is issued (AWIPS header: **TIBWCA**). In either of these situations, WFOs may broadcast selected information over NWR contained within these bulletins, as needed for local customer requirements.

2.4 “ALL CLEAR”. The WC/ATWC is responsible for issuing tsunami watch/warning cancellation bulletins (TSUWCA) and final supplements, but local emergency management authorities are ultimately responsible for determining the final “ALL CLEAR”. An example cancellation bulletin (from WC/ATWC) is in Appendix B.

2.5 Acknowledgment of TSUWCA products. WFOs will acknowledge initial watches, warnings, cancellations, and test products from WC/ATWC, as quickly as possible, using the AWIPS product header: **TMAXXX** (where “XXX” = WFO identifier). In the Acknowledgment message, provide time of receipt (Z), WFO name (or 3-letter WFO ID), e-mail address of the responding individual, and WFO phone number.

APPENDIX A

**Example (Initial) Tsunami Watch/Warning/Advisory from WC/ATWC
(TSUWCA)**

TO ALL TSUNAMI WARNING SYSTEM PARTICIPANTS
SUBJECT - TSUNAMI WARNING BULLETIN - INITIAL
BULLETIN NUMBER 1
WEST COAST AND ALASKA TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED 10/02/2003 AT 1813 UTC

...A TSUNAMI WARNING IS IN EFFECT FOR THE COASTAL AREAS
FROM POINT CONCEPTION-CA. TO LANGARA I.-BC. INCLUSIVE...

...A TSUNAMI WATCH IS IN EFFECT FOR THE COASTAL AREAS FROM
THE CALIFORNIA-MEXICO BORDER TO POINT CONCEPTION-CA. AND
FROM LANGARA I.-BC. TO SITKA-AK...

...AT THIS TIME THIS BULLETIN IS FOR INFORMATION ONLY FOR
OTHER AREAS OF ALASKA...

EARTHQUAKE DATA
PRELIMINARY MAGNITUDE - 7.2
LOCATION - 45.3N 124W - 95 MILES NW OF EUGENE-OR.
70 MILES SW OF PORTLAND-OR.
TIME - 1000 ADT 10/02/2003
1100 PDT 10/02/2003
1800 UTC 10/02/2003

EVALUATION
IT IS NOT KNOWN - REPEAT NOT KNOWN - IF A TSUNAMI EXISTS BUT A
TSUNAMI MAY HAVE BEEN GENERATED. THEREFORE PERSONS IN LOW
LYING COASTAL AREAS SHOULD BE ALERT TO INSTRUCTIONS FROM THEIR
LOCAL EMERGENCY OFFICIALS. PERSONS ON THE BEACH SHOULD MOVE TO
HIGHER GROUND IF IN A WARNED AREA. TSUNAMI WAVE HEIGHTS CANNOT BE
PREDICTED. TSUNAMIS MAY BE A SERIES OF WAVES WHICH COULD BE
DANGEROUS FOR SEVERAL HOURS AFTER THE INITIAL WAVE ARRIVAL.

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PZZ130-131-133-134-132-135-150-153-156-110-250-210-255-350-
353-356-450-455-550-530-535-555-670-673-WAZ001-002-005-006-
007-008-009-010-011-013-014-015-016-021-ORZ001-002-021-022-
CAZ001-002-005-007-006-075-074-009-034-035-021913-
COASTAL AREAS FROM POINT CONCEPTION-CA. TO LANGARA I.-BC.
INCLUSIVE.

...A TSUNAMI WARNING IS IN EFFECT FOR THE COASTAL AREAS
FROM POINT CONCEPTION-CA. TO LANGARA I.-BC. INCLUSIVE...

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ESTIMATED TIMES OF INITIAL WAVE ARRIVAL

CHARLESTON-OR 1201 PDT OCT 2 ASTORIA-OR 1232 PDT OCT 2
SEASIDE-OR 1202 PDT OCT 2 TOFINO-BC 1240 PDT OCT 2
CRESCENT CITY-CA 1221 PDT OCT 2 SAN FRANCISCO-CA 1332 PDT OCT 2
NEAH BAY-WA 1230 PDT OCT 2 LANGARA-BC 1335 PDT OCT 2
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PKZ120-115-PZZ673-650-655-750-AKZ023-025-026-027-029-028-
CAZ039-040-046-041-042-043-021913-
COASTAL AREAS FROM THE CALIFORNIA-MEXICO BORDER TO POINT
CONCEPTION-CA. AND FROM LANGARA I.-BC. TO SITKA-AK.

...A TSUNAMI WATCH IS IN EFFECT FOR THE COASTAL AREAS FROM
THE CALIFORNIA-MEXICO BORDER TO POINT CONCEPTION-CA. AND
FROM LANGARA I.-BC. TO SITKA-AK...

ESTIMATED TIMES OF INITIAL WAVE ARRIVAL

SAN PEDRO-CA 1410 PDT OCT 2 LA JOLLA-CA 1424 PDT OCT 2
SITKA-AK 1322 ADT OCT 2 KETCHIKAN-AK 1348 ADT OCT 2
\$\$

PKZ130-122-121-123-520-510-320-330-321-310-410-400-220-221-
233-232-230-231-210-211-114-113-AKZ191-185-181-171-145-111-
101-121-125-131-135-022-021-024-021913-
COASTAL AREAS FROM SITKA-AK. TO ATTU-AK.

...NO - REPEAT NO - TSUNAMI WATCH OR WARNING IS IN EFFECT
FOR THE COASTAL AREAS FROM SITKA-AK. TO ATTU-AK...

FOR INFORMATION ONLY - ESTIMATED TIMES OF INITIAL WAVE ARRIVAL

YAKUTAT-AK 1416 ADT OCT 2 SAND PT.-AK 1516 ADT OCT 2
JUNEAU-AK 1427 ADT OCT 2 DUTCH HARBOR-AK 1534 ADT OCT 2
KODIAK-AK 1441 ADT OCT 2 HOMER-AK 1551 ADT OCT 2
SEWARD-AK 1443 ADT OCT 2 COLD BAY-AK 1552 ADT OCT 2
VALDEZ-AK 1500 ADT OCT 2 ADAK-AK 1559 ADT OCT 2
CORDOVA-AK 1510 ADT OCT 2 SHEMA-AK 1640 ADT OCT 2
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THE PACIFIC TSUNAMI WARNING CENTER AT EWA BEACH HAWAII WILL
ISSUE BULLETINS FOR OTHER AREAS OF THE PACIFIC.

BULLETINS WILL BE ISSUED HOURLY OR SOONER IF CONDITIONS
WARRANT. THE TSUNAMI WATCH/WARNING WILL REMAIN IN EFFECT
UNTIL FURTHER NOTICE. REFER TO THE INTERNET SITE
[HTTP://WCATWC.ARH.NOAA.GOV](http://WCATWC.ARH.NOAA.GOV) FOR MORE INFORMATION AND ETA SITES.

APPENDIX B

**Example Tsunami Watch/Warning Cancellation Bulletin
(TSUWCA)**

TO ALL TSUNAMI WARNING SYSTEM PARTICIPANTS
SUBJECT - TSUNAMI WARNING BULLETIN - FINAL
BULLETIN NUMBER 2
WEST COAST AND ALASKA TSUNAMI WARNING CENTER/NOAA/NWS
ISSUED 10/02/2003 AT 1816 UTC

...THE TSUNAMI WARNING AND WATCH STATUS IS CANCELLED FOR
CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA - AND
ALASKA...

EARTHQUAKE DATA
PRELIMINARY MAGNITUDE - 7.2
LOCATION - 45.3N 124W - 95 MILES NW OF EUGENE-OR.
70 MILES SW OF PORTLAND-OR.
TIME - 1000 ADT 10/02/2003
1100 PDT 10/02/2003
1800 UTC 10/02/2003

EVALUATION
NO DESTRUCTIVE TSUNAMI HAS BEEN RECORDED. NO TSUNAMI DANGER
EXISTS FOR ALASKA - BRITISH COLUMBIA - WASHINGTON - OREGON OR
CALIFORNIA. LOCAL AUTHORITIES CAN ASSUME ALL CLEAR UPON
RECEIPT OF THIS BULLETIN.

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PKZ120-115-PZZ130-131-133-134-132-135-150-153-156-110-250-
210-255-350-353-356-450-455-550-530-535-555-670-673-650-
655-750-AKZ023-025-026-027-029-028-WAZ001-002-005-006-007-
008-009-010-011-013-014-015-016-021-ORZ001-002-021-022-CAZ001-
002-005-007-006-075-074-009-034-035-039-040-046-041-042-
043-021916-
COASTAL AREAS OF CALIFORNIA - OREGON - WASHINGTON - BRITISH
COLUMBIA - AND ALASKA.

...THE TSUNAMI WARNING AND WATCH STATUS IS CANCELLED FOR
CALIFORNIA - OREGON - WASHINGTON - BRITISH COLUMBIA - AND
ALASKA...

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THE PACIFIC TSUNAMI WARNING CENTER WILL ISSUE A FINAL BULLETIN.

THIS WILL BE THE LAST WEST COAST AND ALASKA TSUNAMI WARNING
CENTER WATCH/WARNING BULLETIN ISSUED FOR THIS EVENT.
THIS INFORMATION IS ALSO POSTED AT [HTTP://WCATWC.ARH.NOAA.GOV](http://WCATWC.ARH.NOAA.GOV).